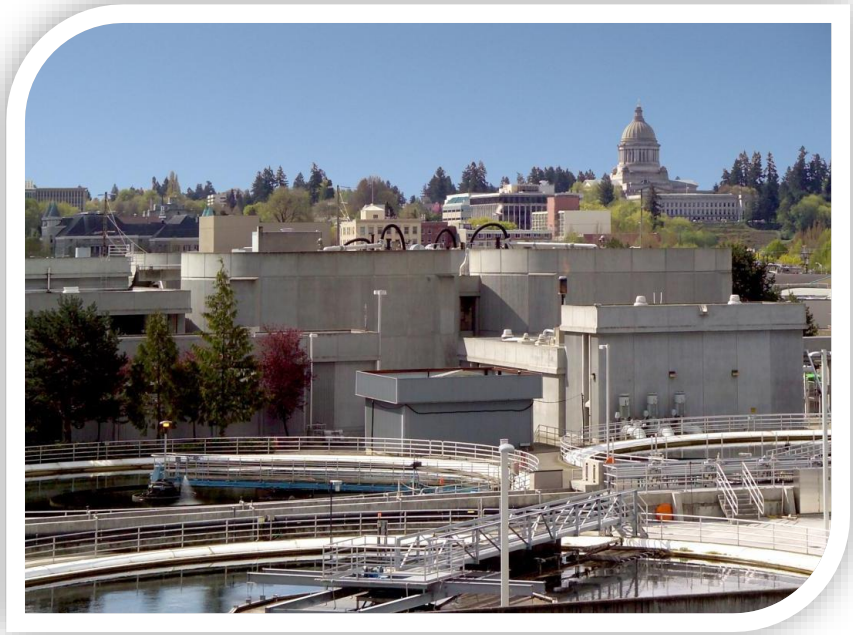
LOTT Clean Water Alliance

Cleaning and Restoring Water Resources

Washington State Legislature Joint Legislative Task Force on Water Resource Mitigation

November 2, 2021



Matt Kennelly, P.E.
Asst. Executive Director

What is LOTT?

- Governmental, non-profit corporation (501c3)
- Collaboration of four local governments
  - **L**acey
  - **O**lympia
  - **T**umwater
  - **T**hurston County

Board of Directors

Cynthia Pratt, Lacey

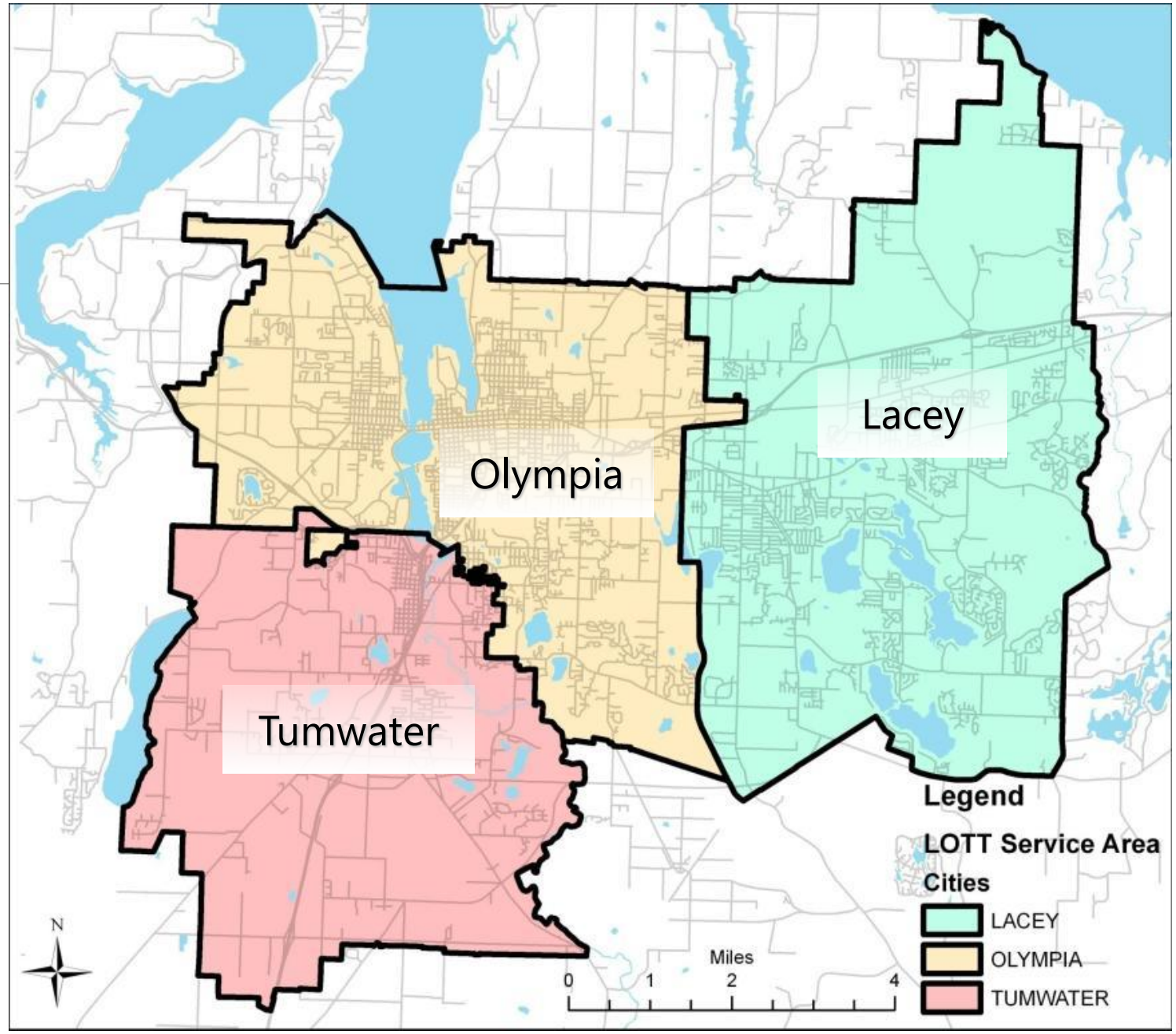
Lisa Parshley, Olympia

Pete Kmet, Tumwater

Tye Menser, Thurston County

Service Area

- Total population = 175,000
- Sewered population = 116,000
- Septic system population = 55,000
- Roughly 68% sewer, 32% septic



Budd Inlet Treatment Plant

- 12 million gallons per day (average)
- Peak flows can exceed 65 million gallons per day
- Treat to strict advanced secondary standards
- Discharge through diffuser pipe in Budd Inlet
- Reclaimed water production

Budd Inlet Reclaimed Water Plant

Martin Way Reclaimed Water Plant

Reclaimed Water

- Treated to a very high standard:
  - Class A Reclaimed Water
- Highly regulated and monitored
- Approved for any use except drinking

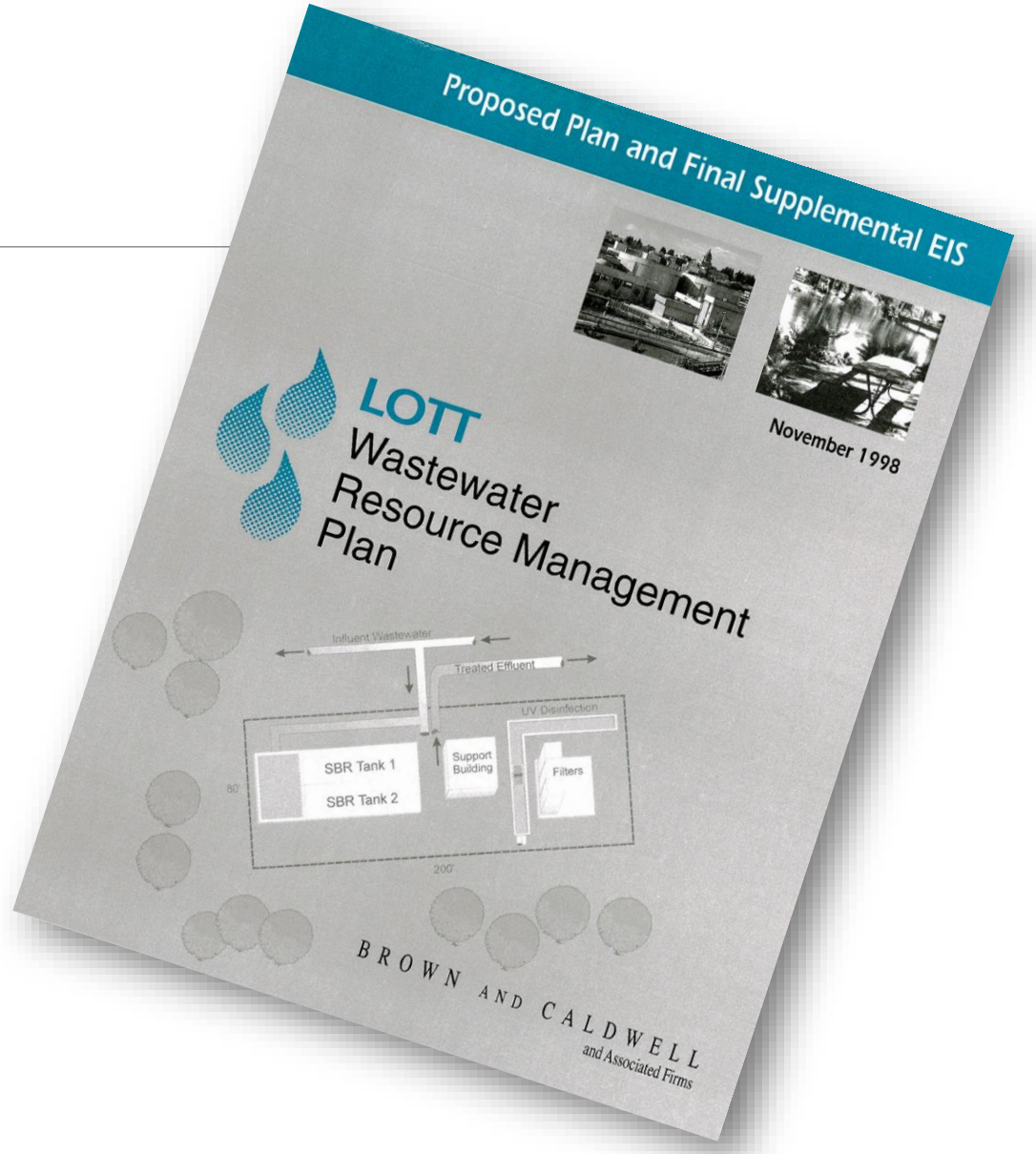
Why Reclaimed Water?

Public Values:

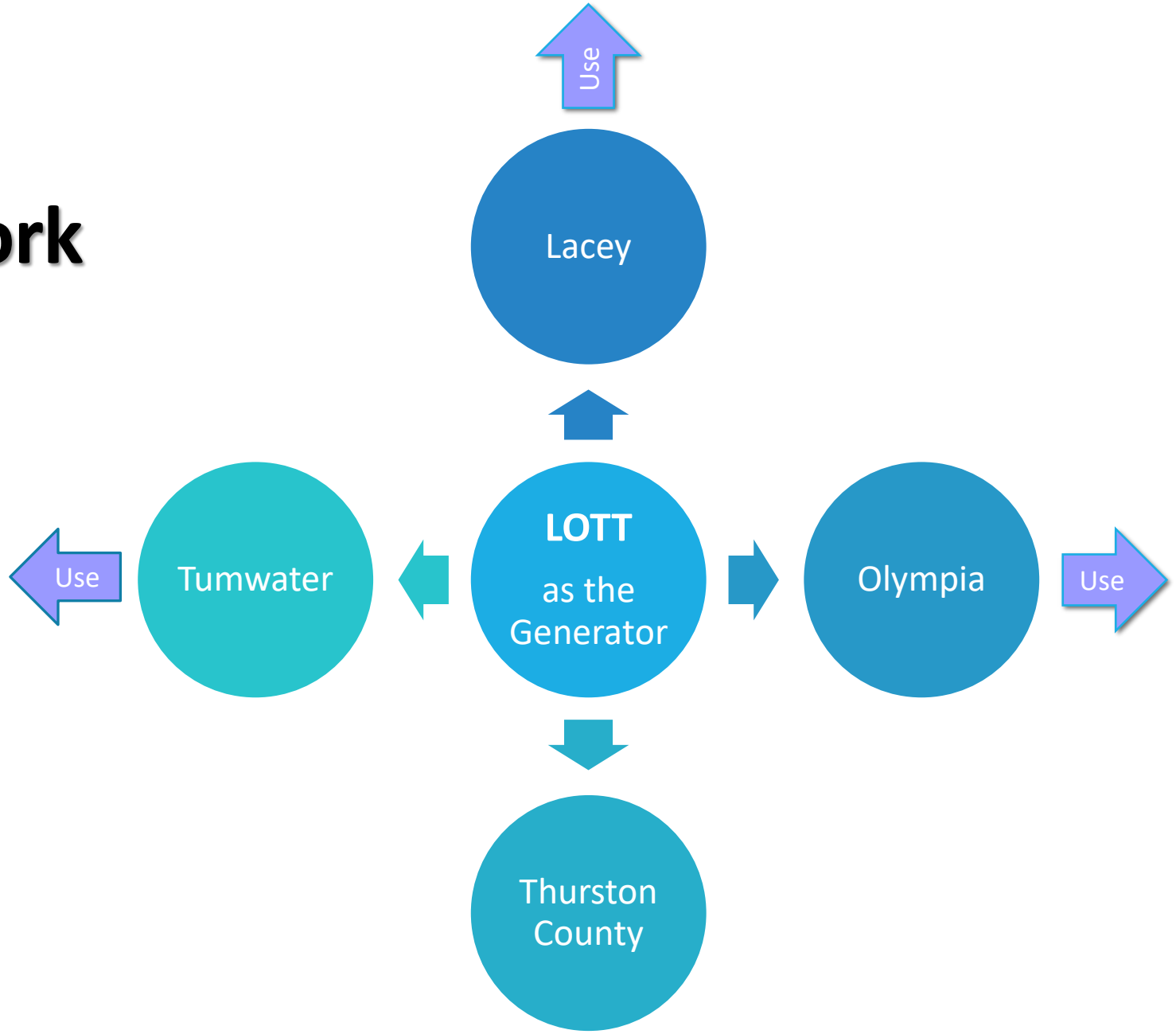
- Meet future wastewater needs
- Treat wastewater as a valuable resource
- Maximize benefits to the environment
- Provide multiple community benefits

Long-Term Strategy:

- Expand production and use of reclaimed water
- Use reclaimed water to replenish groundwater

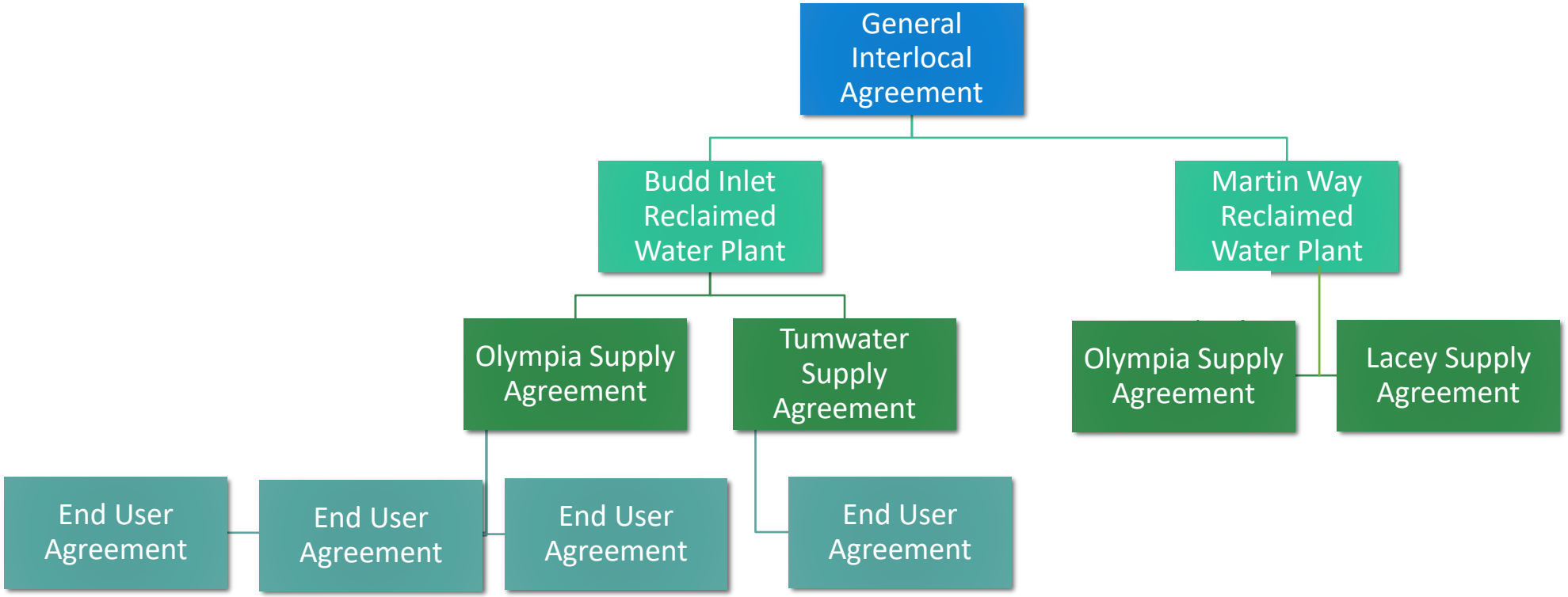


Reclaimed Water Program Framework



Reclaimed Water Agreements

Washington State Reclaimed Water Rule: RCW 90.46
Reclaimed Water Guidance: WAC 179-219



City of Olympia, Port of Olympia, and State

City of Tumwater Storage Tank and Irrigation

Hawks Prairie Ponds and Recharge Basins

(LOTT Owned)

WELCOME TO WOODLAND CREEK
Groundwater Recharge Facility

This facility is jointly owned by the Cities of Lacey and Olympia.

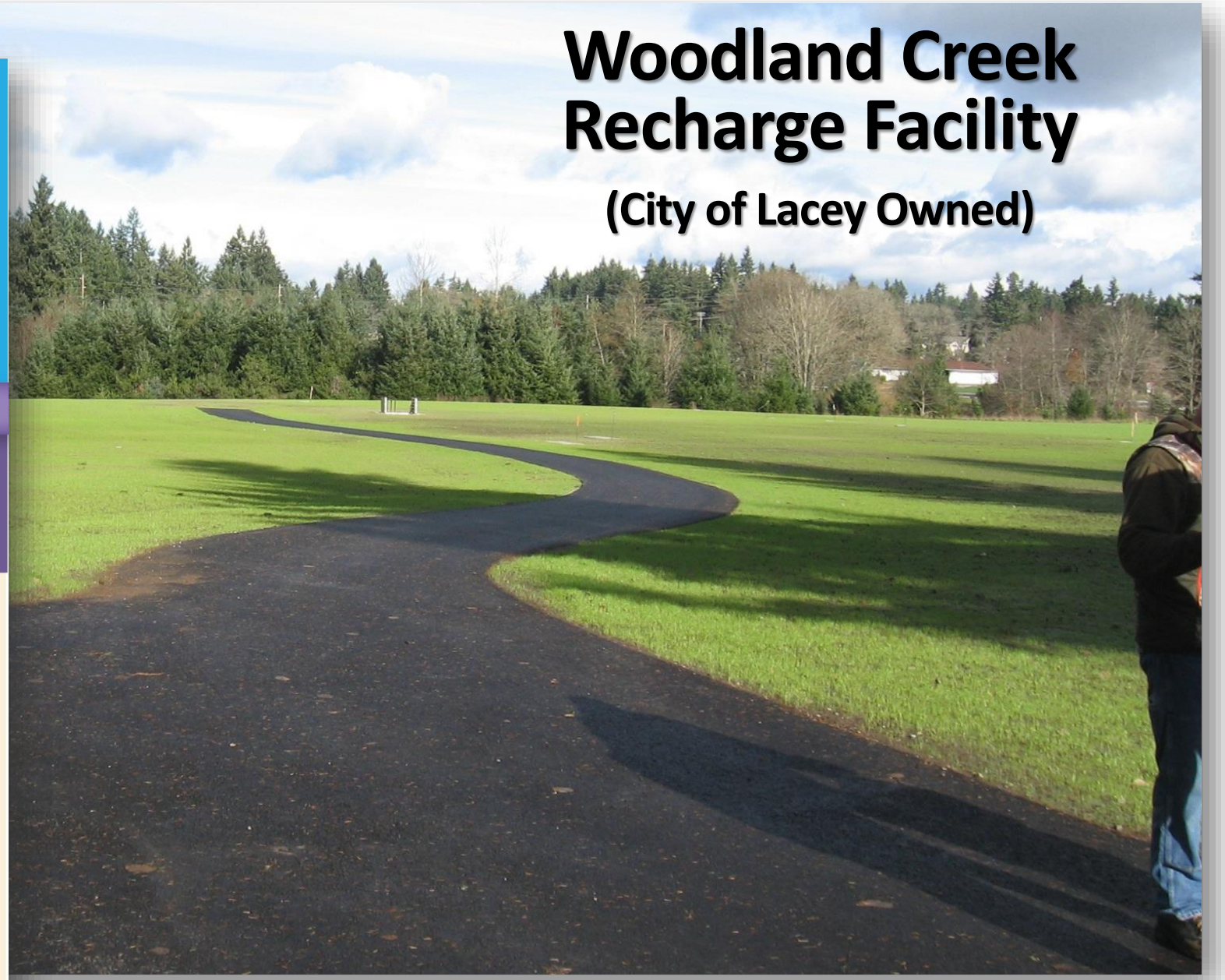
1 Beneath this field is a state-of-the-art groundwater recharge facility that is using locally-produced Class A Reclaimed Water to replenish groundwater and streamflows in nearby Woodland Creek.

A Unique Facility

This recharge facility is the result of a joint effort by the Cities of Lacey and Olympia to ensure that stream flows in Woodland Creek are not diminished because of pumping drinking water from new wells constructed by the cities. This recharge facility consists of 4.7 miles of underground infiltration chambers underneath a four acre field. The chambers are located about three feet below ground and slowly discharge reclaimed water into the soil. Groundwater in and around the recharge facility is monitored remotely from a control center. The data collected is used to determine how much reclaimed water to release through the infiltration chambers. More water can be discharged during dry summer months, while less water is released during the wet months when groundwater levels are typically high. Depending on the month, 0.3 - 0.9 million gallons of reclaimed water are infiltrated per day.

Installation of the infiltration chambers prior to re-seeding the grassy field.

For more information, please visit www.ci.lacey.wa.us/reclaimed-water.



Woodland Creek Recharge Facility

(City of Lacey Owned)

LOTT Regional Services Center

LOTT
East Bay Public Plaza

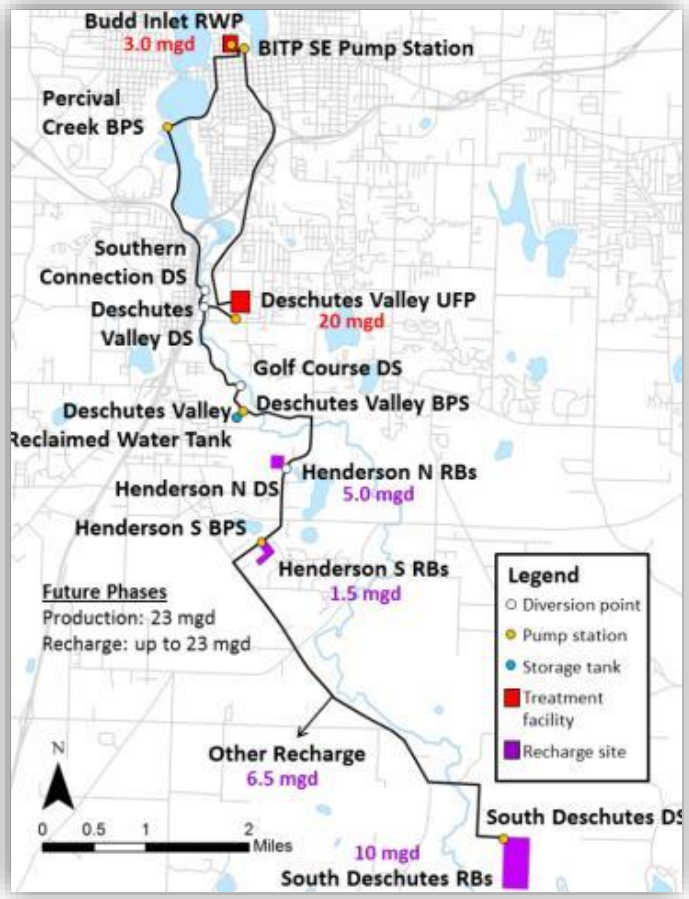
Reclaimed Water Strategy

Original Strategy

- Wastewater system capacity as primary driver
- Expand incrementally over time
- Small reclaimed water satellite plants
- Timing dependent on permit considerations and growth

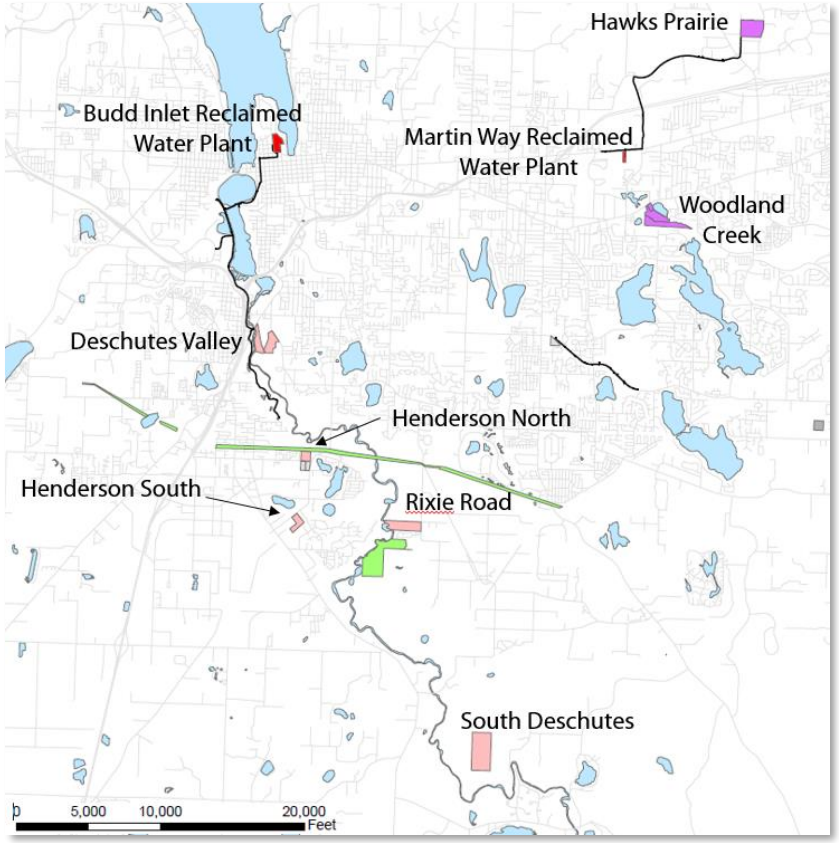
New Considerations

- Centralized facilities are more cost effective
- Reclaimed water demand may become the driver
- New dynamic – balancing capacity needs with demand



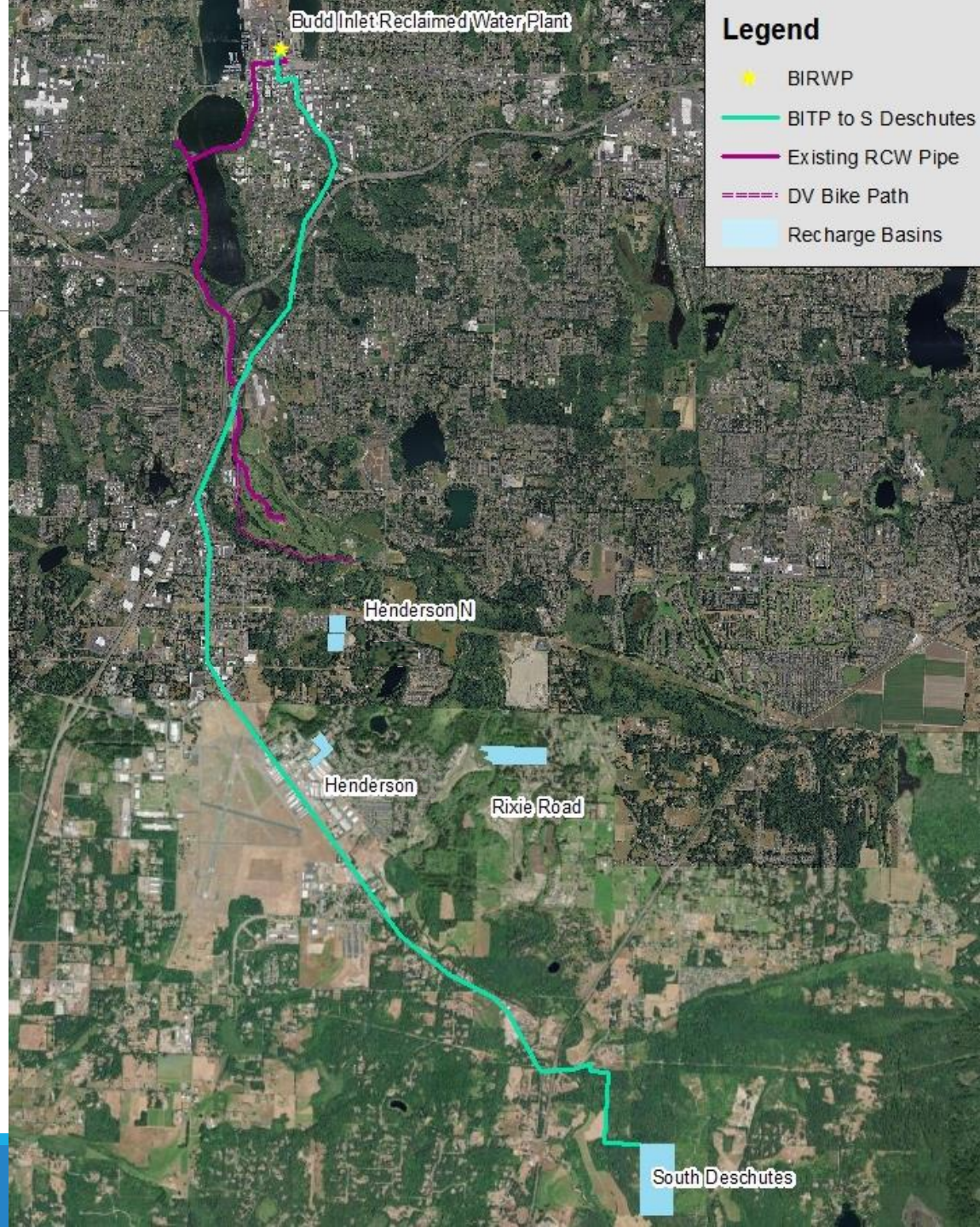
Ongoing Master Planning

- Treatment, Conveyance, Disposition
  - When?
  - Where?
  - Quantity?
  - Quality?
  - Cost?
  - Mutual benefits?
- Master planning to update strategy in 2022



Master Planning Progress So Far

- Infiltration capacities for some existing recharge sites are lower than originally projected
- Difficult to find new sites with adequate capacity
- Cost of conveyance is extremely high
- New understanding of risks
- Existing reclaimed water infrastructure readily expandable
- Flexibility options emerging with additional treatment considerations



Reclaimed Water Infiltration Study

- What chemicals are present in wastewater, reclaimed water, groundwater, and surface waters?
- When reclaimed water is used to replenish groundwater, what happens to residual chemicals?
- Are there risks to public health and the environment?
- What can be done to reduce those risks?

Questions?

lottcleanwater.org

Matt Kennelly, PE
Assistant Executive Director

mattkennelly@lottcleanwater.org